



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,735	03/13/2001	James L. Taylor	PLNK-020	3846
44279	7590	07/12/2005	EXAMINER	
PULSE-LINK, INC. 1969 KELLOGG AVENUE CARLSBAD, CA 92008			CHO, HONG SOL	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

5m

Office Action Summary	Application No. 09/805,735	Applicant(s) TAYLOR, JAMES L.	
	Examiner Hong Cho	Art Unit 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-24 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-22 is/are allowed.
- 6) ☒ Claim(s) 18, 19, 23 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The following is in response to the amendments filed on 1/7/2005.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eatherton (U.S. 6697382), in view of Hulyalkar et al (U.S. 6347084), hereinafter referred to as Hulyalkar.

Re claim 18, Eatherton discloses synchronizing network devices with global time counter (*synchronization among a plurality of network devices having local clocks*, figure 3a). Eatherton discloses a master component sending out an update message to all components in network and neighboring components sending out an update message to all other components to propagate the global time throughout the packet switched networks (*broadcasting a first packet from a first network device to other network*

devices wherein the first packet includes a global time reference derived from the local clock of the first network device, column 1, lines 57-64; column 3, lines 61-66).

Eatherton discloses updating a time counter with neighboring components to the global time generated from a master component (*adjusting the clocks of the network devices to be closer to the local of the first network device*, column 1, lines 51-56; column 4, lines 1-6; column 6, lines 11-18). Eatherton fails to disclose the global time reference including the least significant part of the local clock of the first network device and not including the most significant part of the local clock of the first network device wherein the most significant part of one of the network device local clocks is broadcast periodically and the most significant parts of all local clocks are conformed to the broadcast most significant part. Hulyalkar discloses sending timestamp information by a timestamp_preset command (*least significant part of the local clock of the first network device*, column 6, lines 54-58). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Eatherton to use timestamp_preset command of Hulyalkar in sending timestamp information to permit precise and deterministic scheduling of the transmission of the timestamp value (column 6, lines 48-50).

Re claim 19, Eatherton discloses all of the claim limitations of claim 18, but fails to disclose broadcasting the most significant part of one of the network device local clocks periodically and conforming the most significant parts of all local clocks to the broadcast most significant part. Hulyalkar discloses the base station broadcasting timestamp_load command (*most significant part of the local clock of the first network device*,) to wireless terminals to synchronize their respective timestamp register (column

8, lines 44-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Eatherton to use timestamp_load command of Hulyalkar in sending timestamp information to eliminate the necessity of sending only the timestamp value (column 6, lines 48-52).

4. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eatherton (U.S. 6697382), in view of Geiger et al (U.S. 6069887), hereinafter referred to as Geiger.

Re claims 23 and 24, Eatherton discloses synchronizing network devices with global time counter (*synchronization among a plurality of network devices having local clocks*, figure 3a). Eatherton discloses a master component sending out an update message to all components in network and neighboring components sending out an update message to all other components to propagate the global time throughout the packet switched networks (*broadcasting a first packet from a first network device to other network devices wherein the first packet includes a global time reference derived from the local clock of the first network device*, column 1, lines 57-64; column 3, lines 61-66). Eatherton discloses updating a time counter with neighboring components to the global time generated from a master component (*adjusting the clocks of the network devices to be closer to the local of the first network device*, column 1, lines 51-56; column 4, lines 1-6; column 6, lines 11-18). Eatherton fails to disclose deriving global time reference from the local clock of the first network device immediately after a frame

synchronization portion of a packet is transmitted and comparing the local clock of a receiving network device at the instant that frame synchronization is detected to the transmitted global time reference. Geiger discloses receiving a packet with a time synchronization field value from a first end station in a second end station of a communication group comparing upon receipt of the packet the time synchronization field value with a local time value in the second end station to determine whether the local time value requires updating to maintain synchronization between the first and second end stations (abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify control packet of Eatherton to have a time synchronization field of Geiger so that local time value would be updated to the time synchronization field value of the maser node more effectively by checking if the unit has a valid time synchronization field value for time synchronization (column 4, lines 35-43).

Allowable Subject Matter

5. Claims 20-22 are allowable.

The following is an examiner's statement for reasons for allowance.

6. Claim 20 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest maintaining synchronization among a plurality of network devices having local clocks that participate in a network by broadcasting a first packet from a first network device to other network devices that participate in the network wherein the first packet includes a global time

reference derived from the local clock of the first network device and adjusting the clocks of the network devices that receive the first packet to be closer to the local clock of the first network device, wherein adjusting the clocks of the network devices that receive the first packet to be closer to the local clock of the first network device includes adjusting the clocks of the network devices by approximately one half the difference between the broadcast global time reference and the unadjusted value of the clock being adjusted.

Claim 21 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest maintaining synchronization among a plurality of network devices having local clocks that participate in a network by broadcasting a first packet from a first network device to other network devices that participate in the network wherein the first packet includes a global time reference derived from the local clock of the first network device and adjusting the clocks of the network devices that receive the first packet to be closer to the local clock of the first network device, wherein adjusting the clocks of the network devices that receive the first packet to be closer to the local clock of the first network device includes adjusting the clocks of the network devices according to a nonlinear function of the difference between the unadjusted value of the clock being adjusted and the broadcast global time reference.

Claim 22 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest maintaining synchronization among a plurality of network devices having local clocks that participate in a network by broadcasting a first packet from a first network device to other network

devices that participate in the network wherein the first packet includes a global time reference derived from the local clock of the first network device and adjusting the clocks of the network devices that receive the first packet to be closer to the local clock of the first network device, wherein adjusting the clocks of the network devices that receive the first packet to be closer to the local clock of the first network device includes adjusting the clocks of the network devices according to a nonlinear function of the difference between the unadjusted value of the clock being adjusted and the broadcast global time reference, and wherein the nonlinear function of the difference between the unadjusted value of the clock being adjusted and the broadcast global time reference causes substantially no adjustment to the clock being adjusted when the difference between the unadjusted value of the clock being adjusted and the broadcast global time reference is greater than a maximum adjustable difference.

Response to Arguments

7. The Examiner apologizes that after reviewing a case and a prior art the rejection appear to be justified.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
 - US Patent (6909728) to Kuribayashi et al

Art Unit: 2662

- US Patent (5517505) to Buchholz et al

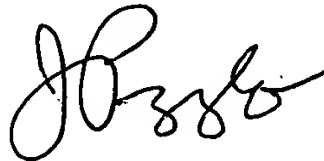
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Cho whose telephone number is 571-272-3087. The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3088.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hc

Hong Cho
Patent Examiner
7/8/2005


JOHN PEZZULLO
PRIMARY EXAMINER